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CLAIMS

1. A method for supplying high-purity oxygen by cryogenic distillation of air from an installation comprising a first air separation unit (1) and a second air separation unit (2), the first air separation unit comprising a medium-pressure column, a low-pressure column (4A) thermally coupled to the medium-pressure column, and a mixing column (6A), in which method:
  - 10 i) air to be distilled is sent to the medium-pressure column;
  - ii) oxygen-enriched and nitrogen-enriched liquids are sent from the medium-pressure column to the low-pressure column;
  - 15 iii) in a first step of the air separation unit, an oxygen-enriched liquid stream from the low-pressure column is sent to the top of the mixing column;
  - iv) in the first step, a low-purity oxygen stream is withdrawn from the top of the mixing column and at 20 least one portion of this is sent to a first consuming unit (5);
  - v) in the first step, air is sent to the mixing column;
  - 25 vi) in the first step, the second air separation unit supplies high-purity oxygen to a second consuming unit (9), characterized in that:
  - 30 vii) in a second step, in the first air separation unit, the oxygen-enriched liquid stream sent to the top of the mixing column is reduced, possibly to zero, the stream of air sent to the mixing column is reduced, possibly to zero, and the stream of low-purity oxygen withdrawn from the top of the mixing column is reduced, possibly to zero; and
  - 35 viii) in the second step, a stream of high-purity oxygen is withdrawn from the bottom of the low-pressure column of the first air separation unit and sent to at least the second consuming unit.

2. The method as claimed in claim 1, in which, in the second step, the second air separation unit (2) does not supply high-purity oxygen to the second consuming unit (9), or supplies part of the high-purity oxygen required by the second consuming unit.

3. The method as claimed in claim 1 or 2, in which the first consuming unit (5) is a blast furnace and the second consuming unit (9) is a converter or an arc furnace.

4. The method as claimed in claim 3, in which, during the first step, the blast furnace (5) is supplied with oxygen-enriched air and during the second step the blast furnace is fed either with air or with air less oxygen-enriched than that with which it is fed during the first step.

5. The method as claimed in one of the preceding claims, in which the mixing column (6A) does not operate during the second step.

6. The method as claimed in one of the preceding claims, in which the second consuming unit (9) is fed with oxygen only from the second air separation unit (2) during the first step and is fed with oxygen only from the first air separation unit (1) during the second step.

7. An installation for supplying oxygen by cryogenic distillation of air, comprising a first air separation unit (1) and a second air separation unit (2), the first air separation unit comprising a medium-pressure column (2A), a low-pressure column (4A) thermally coupled to the medium-pressure column, and a mixing column (6A), which installation comprises:

a) means for sending air to be distilled to the medium-pressure column;

b) means for sending oxygen-enriched and nitrogen-enriched liquids from the medium-pressure column to the low-pressure column;

5 c) means for sending a stream of oxygen-enriched liquid from the low-pressure column to the top of the mixing column;

d) means for sending air to the bottom of the mixing column;

10 e) means for withdrawing a stream of low-purity oxygen from the top of the mixing column and means for sending at least one portion of this to a first consuming unit (5);

15 f) means for sending high-purity oxygen from the second air separation unit to a second consuming unit (9),

characterized in that it includes:

g) means for reducing, possibly to zero, the stream of oxygen-enriched liquid sent to the top of the mixing column;

20 h) means for reducing, possibly to zero, the air sent to the bottom of the mixing column; and

i) means for withdrawing a stream of high-purity oxygen from the bottom of the low-pressure column of the first air separation unit and means for sending 25 this stream to the second consuming unit.

8. The installation as claimed in claim 7, in which the first consuming unit (5) is a blast furnace and the second consuming unit (9) is a converter or an arc furnace.

30 9. The installation as claimed in claim 8, which includes means for feeding the blast furnace (5) with low-purity oxygen from the first air separation unit 35 (1) and means for stopping the low-purity oxygen being sent from the first air separation unit to the blast furnace.

10. The installation as claimed in one of claims 6 to  
9, which includes at least one high-purity oxygen  
compressor (13) upstream of the second consuming unit  
(9) and downstream of the first air separation unit  
5 (1).